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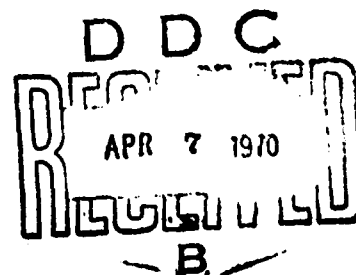
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Introduction

Month after month medical care prices have been leading the
consumer price index to new highs. Because of public reaction
against these escalating costs, all levels of government have become
involved with the problem of rising medical prices. The President
has expressed his concern. Congressional committees have held num-
erous hearings on the issue. In New York, the Courts, the Governor,
Mayoralty candidates, and other officials in New York City all be-
came involved last year in efforts to oppose a Blue Cross request for
an increase in rates of over 40 percent.

In public debate about the causes of medical price rises,
numerous villains have been identified. Fee-gouging physicians are
commonly cited as a prime cause of rising prices. Others have
assigned major responsibility to anarchy in the nation's hospital
system. Also blamed are the drug companies, perennial scapegoats
for high medical costs. Actions and proposals to counter these
causes of rising prices have been numerous. Demonstrators have

appeared at the American Medical Association Convention to protest
high fees, and proposals have been made to audit the tax returns of
physicians who receive more than a certain amount from Medicare and
Medicaid. Legislation has been proposed that would make individual
hospitals subject to central planning authorities as a pre-condition
for reimbursement from Medicare and Medicaid. Proposals for reducing
the patent protection afforded drug companies have also been put for-
ward.

Although the commonly cited causes may partially explain the
rapidly rising price of medical care, the important role of increased
demand for care has received relatively less public attention. Elemen-
tary economics teaches that if demand for a commodity increases and
supply does not respond immediately, price will tend to increase.
Particularly large increments to demand for medical care were caused
by the Medicare and Medicaid programs. Table 1 shows the annual per-
centage change in selected medical care prices before and after the
introduction of Medicare and Medicaid.[1] It is more than mere coinci-
dence that the rise in medical prices accelerated sharply in fiscal
year 1967, the first year of Medicare and Medicaid. Even before these
programs came into existence, medical experts were complaining about
shortages of skilled personnel, particularly physicians and nurses.
Medicare and Medicaid added billions of dollars to the demand for
medical care, thereby worsening the presumed manpower shortage and

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[1]Some may question the validity of measuring price by cost per
service rather than cost per cure. What evidence we have suggests
that cost per cure has been moving up even more rapidly than the
index based on cost per service.

Table 1

ANNUAL PERCENTAGE CHANGE IN SELECTED MEDICAL
CARE PRICE INDICES

	Fiscal Years 1961-1966	Fiscal Years		
		1967	1968	1969
Medical Care Total	2.7	6..	6.4	7.1
Physicians' Fees	3.2	7.5	6.1	6.7
Hospital Daily Service Charges	6.4	16.6	15.4	14.5

Source: Calculated from data in Monthly Labor Review.

contributing to the upward pressures on medical prices.

As Table 1 also shows, the percentage rise in hospital daily service charges has been approximately double the rise in physician prices and all medical care prices. In this paper we wish to consider the role insurance programs have played in contributing to price increases. Since the problem of rising prices appears most acute for hospital care, we will focus our attention there, but what we have to say applies to all medical services that are covered by insurance.

There is, in addition to price increases, a further problem for public policy on medical care. Rising prices are a signal that consumers wish more resources to be devoted to medical care. In the long run, the supply of medical resources can be expected to respond to this signal. More kidney dialysis machines can be built, more nurses can be trained, and so forth. When and if supply responds to increased demands, the price increases .11 moderate and perhaps even cease. We will then face a situation in which a larger share of our productive resources are devoted to medical care and not to the other goods and services they are presently producing. Other goods will be scarcer; medical care will be more plentiful. How far should this process be carried? It is clear that at some point we will find the proportion of other goods and medical care is optimal; at that point we would not wish to give up still more housing or education to obtain more medical care. How can that proportion be determined? And can the way we finance medical care give us any help in determining it? We shall consider these questions.

The Effects of Medical Insurance

The rising demand for medical care needs little documentation. Table 2 shows that the national total and the amount per capita spent on medical care in both current and constant (real) dollars has been rising steadily over time. (The figures in constant dollars are an attempt to correct for price increases and measure how much quantity has increased.) We see that the output of medical care services has been expanding, reflecting increasing demands for these services.

When we look at hospital services alone, much the same picture emerges. Table 3 shows that both expenses per patient day and the number of patient days have been increasing over time. Thus, increases in both quantity consumed as well as price inflation have been contributing to the increased total costs of hospital care.

One of the important factors contributing to the rising demand for medical care has been the spread of medical insurance. Why should insurance affect demand? In effect, insurance lowers the price the consumer pays for consuming any particular medical care service. Many individuals believe that this should have little effect. They assume the consumption of medical care services does not respond to price (or to the provision of insurance). This view might be summed up by the statement; "If you're sick, you go to the doctor; if you're not sick, you don't." Most of the evidence we have contradicts this view. Although much of the evidence is couched in somewhat technical terms, an exception is the change in the pattern of physician visits by income class before and after the introduction of Medicare and Medicaid. Table 4 shows that in fiscal year 1964, visits

Table 2

TOTAL DOLLAR EXPENDITURES ON MEDICAL CARE
IN VARIOUS FISCAL YEARS

Fiscal Year	Total Dollar Amount (in billions of current dollars)	Per Capita (current dollars)	Total Constant Dollar Amount (in billions of 1957-1959 dollars)	Per Capita (1957-59 dollars)
1929	3.3	27.39	-	-
1935	2.9	22.95	5.9	46.69
1940	3.5	26.74	7.0	53.48
1945	7.5	56.01	13.2	98.57
1950	10.5	70.53	14.4	96.45
1955	15.9	98.22	18.2	112.43
1960	23.2	130.46	21.8	122.59
1965	33.5	175.05	27.7	144.74
1966	36.4	187.81	29.1	150.14
1967	41.6	212.33	31.5	160.78
1968	46.9	237.04	33.3	168.30
1969	52.6	263.20	35.1	175.64

Sources: Social Security Administration, Office of Research and
Statistics, Note No. 18, 1969, and Monthly Labor Review,
The Consumer Price Index for Medical Care has been used
to deflate current expenditures. The calendar year
deflators were interpolated to give fiscal year defla-
tors (except for 1935 which was the beginning of the
series). The population figures used to derive per
capita expenditure are figures for the beginning of
the fiscal year.

Table 3

RELATIVE CONTRIBUTION OF EXPENSE PER PATIENT DAY AND
PATIENT DAYS TO INCREASED HOSPITAL
EXPENDITURE 1965-1968

Year	Expenditures, Short Term General (Non-Federal) Hospitals (billions)	Expense per Patient Day	Patient Days (millions)
1950	$2.1	$15.62	135.0
1960	5.6	32.23	174.6
1965	9.1	44.48	205.6
1968	14.2	61.38	230.7

Source: **Hospitals**, Guide Issues 1969, 1968, Years Ending in
September.

Table 4

NUMBER OF PHYSICIAN VISITS PER PER PER YEAR BY
FAMILY INCOME

Family Income:	Under $3,000	$3,000-$4,999	$5,000-$6,999	$7,000-$9,999	Over $10,000
Fiscal Year 1964	4.3	4.3	4.5	4.7	5.1
Fiscal Year 1967	4.6	4.1	4.2	4.3	4.6

Sources: National Center for Health Statistics, "Volume of Physician Visits," Public Health
Service Publication 1000, Series 10, numbers 18 and 49; Washington: GPO, 1965 and
1968 respectively.

to a physician per person per year rose steadily with income class.
In fiscal 1967, the first year of Medicare and Medicaid, this pattern
had radically altered. The lowest income class (under $3,000) now
had visits equal to the highest income class (over $10,000) with other
income classes somewhat lower than the two extremes. It is difficult
to account for this change except by reference to Medicare and
Medicaid. The Medicare and Medicaid programs were aimed at the poor
and the aged (many of whom fall into the lowest income category), and
Table 4 indicates that they succeeded in their goal of lowering
economic barriers to care faced by low-income families.

Apart from the public programs of Medicare and Medicaid, private
health insurance coverage has been spreading over time, and the
proportion of expenditures covered by out-of-pocket funds has been
falling. Table 5 shows the sources of funds for personal health
care expenditures. Note that the percentage of expenditure covered
by direct payments from individuals has dropped steadily over time.
A particularly sharp drop occurred in fiscal year 1967, the first
year of Medicare and Medicaid. Corresponding to the drop in the funds
covered by direct payment in 1967 was a near doubling of the share of
the Federal government. Another large drop in the share of expendi-
tures covered by direct payment occurred in 1968, with a correspond-
ing rise in the Federal government's share. In contrast to the share
covered by direct payment, the share of expenditure covered by private
insurance (which grew rapidly up until 1965) dropped only slightly
in 1966 and 1967 and has been nearly constant since. This implies
that Medicare and Medicaid are doing what they were designed to do;

Table 5

SOURCES OF FUNDS FOR PERSONAL HEALTH CARE EXPENDITURES
PERCENTAGE DISTRIBUTION

Fiscal Year	Percentage from Private Sources			Percentage from Public Sources		Total Percentage
	Direct Payments	Insurance Benefits	Other	Federal	State & Local	
1929	88.6		2.8	2.6	6.0	100.0
1935	85.0		2.0	3.0	10.0	100.0
1940	82.8		2.3	3.8	11.1	100.0
1945	65.0		4.6	24.0	6.4	100.0
1950	67.7	8.3	4.0	9.3	10.6	100.0
1955	59.6	14.8	3.8	10.0	11.9	100.0
1960	56.3	20.2	2.2	9.0	12.2	100.0
1965	56.3	24.7	2.0	8.5	12.3	100.0
1966	52.5	24.5	2.0	9.2	12.5	100.0
1967	45.8	22.5	1.8	18.0	12.0	100.0
1968	41.7	22.2	1.7	22.2	12.0	100.0
1969	40.6	22.3	1.5	23.5	12.1	100.0

Source: Social Security Administration, Office of Research and
Statistics, Note No. 18, 1969.

that is, reach individuals whose private insurance coverage was scanty
or non-existent. In other words, Medicare and Medicaid are not just
covering expenditures which were previously being covered by private
insurance; if they were, we would see a much larger drop in the share
of expenses covered by private insurance companies in 1967 and after.

The benefits of medical insurance, both public and private, are
widely appreciated: Consumers are afforded protection against unpre-
dictable requirements for large medical care expenditures; and the
provision of government-sponsored insurance for low income persons
is one means of eliminating financial barriers to medical care.

On the other hand, health insurance also has certain undesirable
side effects. First, we have already pointed out that by increasing
demand for care, insurance programs tend to raise price. If a shortage
situation already exists which is causing prices to rise, widespread in-
surance coverage will tend to exaggerate the inflationary situation. This
is because insurance shelters covered persons from the full impact of
price rises; thus the normal tendency of rising prices to curtail
demand is greatly diminished. The magnitude of the rise in price
required to curtail demand to a given degree increases directly with
the extent of insurance coverage. At the limit, if all expenses were
covered by insurance, price increase would be completely ineffective
in reducing demand. All readjustment of a disequilibrium situation
would have to come through increases in supply or through increases
in waiting time great enough to persuade individuals to forgo the
service. Since the supply of medical services does not adjust
quickly to price rises, widespread medical insurance can greatly
exaggerate inflationary tendencies in the medical sector. (And it

is not necessarily true that the resulting higher insurance premiums
will reduce the demand for insurance. On the contrary, the risk of
remaining uninsured may make insurance seem even more attractive,
creating a vicious circle.) When a large increment of insurance
coverage is added during a period of shortage, as probably occurred
when Medicare and Medicaid were implemented, there is a twofold
inflationary impact: (1) an increase in the demand for medical ser-
vices, and (2) a reduction in the effectiveness of price rises in
curtailing demand.

Another most important way in which medical insurance contributes
to inflation of medical costs is by reducing consumers' concern over
the expensiveness of care they receive. Because insured individuals
pay little or nothing for the care they receive, they are little con-
cerned over the quantity or cost of care they consume. This lack of
concern has a number of repercussions upon medical costs. Since con-
sumers are unconcerned about costs, providers need not be concerned either.
Hospitals need not worry about consumer resistance to higher prices
resulting from inattention to costs or additions of sophisticated
services that duplicate, perhaps unnecessarily, services of neigh-
boring hospitals. Insurance also removes an important restraining
influence from the physician. When the patient pays the bill,
physicians generally give careful consideration to the costs of al-
ternative courses of treatment for a patient's illness and attempt
to choose the least costly acceptable one. A physician also has to
be concerned about whether the fees that he charges will be acceptable
to the patient or cause the patient to seek care elsewhere. Neither
of these factors is of importance when insurance is paying the bill.

Not only does insurance make consumers willing to tolerate inefficiency and unnecessary expense that they would not otherwise accept, but it actually causes them to prefer care that is overly expensive. That is, insurance causes people to want the best of everything, whether or not it greatly affects their chances of recovery, and regardless of how greatly it adds to expense. When insurance is paying the bill, patients' desire to be comfortable and to receive the most sophisticated care is not appropriately counterbalanced by a concern over the impact on their pocketbooks. The desires of patients for the latest equipment and services coincides with the desires of the medical staff of most hospitals. Hospitals that want to remain competitive with respect to attracting medical staff and patients must respond to these pressures for "more and better" hospital services. Their response to demands for higher quality services results in an increase in inputs per patient day.

Hospital officials, when called upon to explain hospital price increases, have stressed the rising cost of inputs, particularly labor, as well as increased inputs per patient day. Hospitals have had to attract additional labor to meet the increased demands for their services, so they have had to increase wages. But the rise in input prices does not entirely explain the rise in hospital prices. To assess the roles of increased input prices and increased inputs per patient day, we have constructed two indices of hospital input prices, showing the upper and lower bounds for price changes of hospital inputs since 1955. Table 6 compares these input price indices with the increase in cost per patient day. The figures shown

Table 6

SHORT TERM GENERAL AND OTHER SPECIAL HOSPITAL
INPUT PRICE AND COST INDICES

	1955–1960	1960–1965	1965–1966	1966–1967	1967–1968
Hospital Input Price Index – Upper and Lower Bounds on Annual Percent Increase[a]	3.7–3.7[b]	2.7–3.3[b]	0.7–0.7	5.1–7.0	6.2–7.9
Annual Percent Increase in Cost per Patient Day	6.8[b]	6.7[b]	8.9	12.5	13.2

Notes:

[a]For method of calculation see Vincent Taylor, "The Price of Hospital Care," P-4090, The Rand Corporation, Santa Monica, California, May 1969. These data are for years ending in September.

[b]Figures for 1955 through 1965 are annual averages for the five preceding years.

are annual (compound) rates of growth in input prices and costs. For example, over the period 1955-1960 the price of hospital inputs rose 3.7 percent per year, while cost per patient day rose 6.8 percent per year. This means that the rise in the price of inputs can account for about half of the rise in cost per patient day in this period. Looking over Table 6, we can see that typically the annual rise in input prices has accounted for only about half the annual rise in cost per patient day. The remainder can be attributed to increased inputs per patient day. Further, both the rise in input prices and the rise in costs in 1967 and 1968, after the introduction of Medicare and Medicaid, are nearly double their rates in 1955-1965 decade, and there is a substantial rise in costs in 1966 that is nearly all attributable to an increase in inputs per patient day.

Thus, medical insurance has been having its predictable effect on hospital costs. It has raised the number of patient days in hospitals and it has increased the inputs used per patient day. These two effects of insurance have been important contributors to rising expenditures on hospital care, although rising wages of hospital employees have received the bulk of the blame for rapidly rising costs. In fact, the figures in Table 2 and 6 show that the rise in input prices can account for only around one-third of the rise in expenditures on hospital care from 1965 to 1968. The remainder of the rise is accounted for by increased inputs per patient-day and an increased number of patient days. The frequent scapegoat of rising wages for hospital employees tells only part of the story.

In summary, the effects of medical insurance are to: (1) increase the quantity of services demanded; (2) make consumer demands less sensitive to price increases; (3) make physicians and hospital management less concerned with price and cost; and (4) increase the quality of services demanded. All of these act to increase the cost of medical care.

Exerting Pressures for Economy

The normal countervailing force against undue expense is consumer resistance to higher prices -- but the spread of insurance is steadily weakening this beneficial force. Eliminating the consumer of medical care as a force for economy would not be so harmful if insurance organizations substituted effective forces of their own. The Medicare and Medicaid programs are perhaps the most active of the nation's insurance plans in pressing for economy. They attempt to control costs through utilization review in hospitals, re-certification of hospital patients after specified lengths of stay, and review of physician charges for reasonableness and to detect possible fraud. Although such measures may prevent blatant abuses, they fall short of providing a forceful spur toward economy. The consumer is an effective force in the marketplace because in general he spends his dollars where he gets the most value for his money. If insurance organizations are to be effective in improving efficiency and economy in the health sector, they must provide incentives to the providers of medical services similar to those which face producers of other goods. That is, insurance payments must reward those who produce acceptable care at below average costs and should penalize those

who fall short of acceptable standards of quality or efficiency.

Most insurance reimbursement procedures (including those of Medicare and Medicaid) presently provide no rewards or incentives for improved economy. Physicians are paid for all of the services that they render, so long as their fees for those services meet rather loose standards of acceptability. Physicians or groups who are able to provide good care at lower total cost do not gain anything thereby (with the exception of the few groups that underwrite their own insurance). If they cut expenses by 20 percent, the amount that they are paid drops by 20 percent. Given this situation, they have no reason to attempt to conserve on expenses. Hospitals are reimbursed on the basis of either cost or charges, methods that provide no positive incentives or rewards for better performance.

Thus we have a situation where neither the consumers nor the producers of care have any powerful motives to economize on the amount of care consumed or to be concerned with the efficiency of the services being provided. Both, however, have a desire to make the care given of the highest quality. Given this situation, it is little wonder that the costs of medical services have been rising rapidly. They will continue to increase more rapidly than necessary until positive incentives for economy are introduced into the system.

The need to increase pressures for economy in the medical sector has been recognized. The approaches most commonly suggested involve increased regulation in the hospital sector and the establishment of maximum permissible fees for physicians. Although clear in concept, these approaches are difficult to implement in ways that encourage true economy.

Regulation has historically protected the status quo, discouraged competition, and impeded innovation. Given the difficulty of measuring the performance (in terms of efficiency and quality) of hospitals, beneficial effects of regulation in the hospital sector seem particularly difficult to achieve.

Setting maximum fees for physicians may help to eliminate some abuses, but seems unlikely to permit extensive savings. If the maximums are based on prevailing fees, they will not lower the average payment greatly. By permitting physicians to raise their "usual and customary" fee, they may even have the perverse effect of increasing fees. And if they are set unrealistically low, physicians will either withdraw from the insurance plans having such maximums or find means of circumventing them. Given the apparent excess demand for physician services, it will be extremely difficult to prevent fees from continuing to rise by administrative fiat.

A different approach to encouraging economy is for insurance organizations to provide incentives for economy through their payments to providers of care. Insurance organizations may be able to substitute for the consumer in the medical sector by structuring payments to provide the greatest net income to the most efficient producers of care. This approach was stressed by the National Advisory Commission on Health Manpower in their report to the President in 1967. The report describes a number of different ways of providing positive incentives for economy to group practice organizations and to hospitals. A number of related proposals have also been put forth in response to the authorization granted HEW to experiment with incentive reimbursements under Medicare and Medicaid.

Both the discussion of the Health Manpower Report and the
Medicare proposals have the characteristics of attempting to directly
alter the incentives facing the producers of care, without any effort
being made to increase the concern of consumers with the cost of
care. All of the proposed approaches involve establishing "target
costs" or "reasonable prices," and penalizing or rewarding providers
of care according to whether they exceed or come under the targets.
A major and perhaps fatal difficulty is the setting of target costs.
No two hospitals or groups provide exactly the same services or treat
the same mix of patients. How does one allow for such differences
in setting targets? Modern statistical techniques can help with the
answer, but they are not error free, and the cost of error in this
case could be large. Further, this approach to encouraging efficiency
ignores the demands of consumers. If, for example, individuals living
near a hospital are willing to support a high-cost, inefficient
hospital because it is convenient or because they are familiar with
it, should it be forced out of business?

Despite the small likelihood of finding an ideal incentive pay-
ment plan, we suspect that the likelihood of finding a plan which is
a substantial improvement over present arrangements is large. Given
the Federal government's involvement in Medicare and Medicaid, one
would suppose that it would be actively pursuing development of such
plans. This does not appear to be the case. Although the legislation
authorizing Medicare and Medicaid to experiment with incentive payments
on a large scale was passed in 1967, only three relatively small experi-
ments are underway. There has been an apparent reluctance to approve
an experiment that _might_ fail to show savings to the government -- a
peculiar attitude for an experimental program.

A general deficiency in the government's approach to developing
incentive payment plans has been the absence of research to develop
better information on the costs and quality of alternative sources
of care. Such information is clearly essential to any workable in-
centive payment plan, but obtaining truly comparable data will require
development of new accounting systems for hospitals and improved
methods of measuring quality of care. No serious effort has been
made by the government to establish a research program to accomplish
these tasks.

Given the huge sums of money being spent ($11 billion in fiscal
1969 on Medicare and Medicaid alone), the Department of Health,
Education and Welfare should markedly increase the scale and urgency
of efforts to develop workable incentive payment plans.

The Price Subsidy Problem

None of the approaches just discussed satisfactorily attacks a
problem which will probably become increasingly important as the
technological capabilities of medicine expand. That is the problem
referred to in the in oduction as the appropriate tradeoff between
other goods and medical care. Surprising as it may seem to some,
making a good "free" does not necessarily make consumers better off;
in fact, it will in general make them worse off. Although this point
involves some rather subtle reasoning, an analogy might help make it
clearer. Suppose the government decreed that all automobiles would
cost consumers $100. The difference between $100 and cost per auto
would be made up by taxation. In this case, we would expect that
most consumers would demand Cadillac-quality cars, since to any

individual consumer a Cadillac would be no more expensive than a
Volkswagen. Further, we would expect the cost of producing Cadillac-
quality cars to rise, since only styling, convenience, and quality
would be of concern to consumers, not the cost of these features;
therefore producers would have little reason to control costs or
strive for higher efficiency.

Consumers in the aggregate would be worse off for two reasons.
First, as demand for Cadillacs rose, society's resources would flow
from the production of other goods into automobile production, reducing
the amount of other goods. But judging from the present situation in
which consumers are faced with the "true" cost tradeoffs, consumers would
prefer to speed less on automobiles and more on other goods. It can be
shown that this means more of society's resources would be used in auto-
mobile production than consumers truly desire. Second, the cost of
producing high quality automobiles would rise because the cost of
production is unimportant to consumers and, therefore, to the pro-
ducers themselves. The effects of present insurance arrangements on
medical services are analogous to the effects on automobile production
of making all cars sell for $100.

At this point many will seek to differentiate medical care from
our automobile analogy on two grounds. First, if the price of auto-
mobiles is lowered by government subsidy, consumers might plausibly
try to upgrade the number and quality of automobiles they own. But
would they do this with medical care? This is a variant of the
argument we have met before: "If you're sick you go to the doctor;
if you're not, you don't." It is clear that if one has

appendicitis, price will mean very little to him in determining whether
he seeks care. But where will he seek care? At the local community
hospital or an expensive university hospital? What about the type of
physician consulted? (Why should consumers visit a general practitioner
if insurance pays for a high-priced specialist?) What about length-
of-stay in hospitals? (Would the physician forget to discharge his
patient as often if the patient paid the bill?) What about the number
of laboratory tests or X-Rays that the physician orders?

The second way in which medical care appears to many to differ
from automobiles is in their belief that if low income individuals
need medical care, they should not be excluded from it on economic
grounds. And while we may not wish to provide everybody with auto-
mobiles (given the pollution problem we may wish to take some away),
we do want to provide everyone with medical care. However, it is
obvious that all those covered by an insurance scheme are faced with
a price subsidy, not just low income individuals. Is there any reason
to "remove economic barriers to medical care" for upper income classes?
Further, the view that low income individuals should not be excluded
from medical care is too simple. The choice is not simply to provide
sick consumers with care. What kind of care do we want to provide
to them? The absolute "best" we are capable of producing? If so, we
may find our consumption of other goods going down significantly.

We are used to thinking about the traditional situation is which
medical care was not very costly. Thus, to give medical   re to all
who could gain from it did not mean much of a sacrifice elsewhere.
In such a situation many came to view medical care as an absolute,

or in the currently fashionable phrase, "medical care is a right,"
not simply another service. While there are many aspects of medical
care which differentiate it from the typical service, it does resemble
other services or commodities to the extent that more medical care
means less of the others, and some parts of medical care may be
sufficiently expensive that we would rather do without them and con-
sume other goods or services. The present health insurance schemes
fail precisely in the important respect that they do not give us any
clue as to what consumers really are willing to pay for. The only
registration of preferences is through the political process, which
is a notoriously imperfect transmitter of such specific information.

Toward a More Appropriate Kind of Health Insurance

The advantage of medical insurance is that sickness contains
an undeniable random element. This kind of randomness is something
that most consumers probably desire to insure against. Indeed,
medical insurance began as an attempt to pool these risks.

As it has developed, however, health insurance has effectively
eliminated consumers incentives to be concerned about the cost of
care they consume. The result has been to downgrade the importance
of efficiency in the medical care sector and to exaggerate the
demands for the most expensive care. Although the proposed target-
cost reimbursement plans may be able to increase producers' concern
with efficiency (assuming that quality measurement problems can be
handled), consumers would still face unrealistically low out-of-
pocket costs for the care they receive; thus they would not be active
seekers of economical care and would continue to make the type of

inefficient choices discussed in the automobile analogy. Setting target costs for Cadillac producers may help reduce inefficiencies in the production of Cadillacs, but will not lead to an appropriate mix of automobiles.

The need is for health insurance schemes that preserve the desirable aspects of present plans such as risk pooling and reduction of economic barriers for low income individuals, but reduce the distortion of consumer choice. The appealing feature of insurance is that it transfers enough money to the sick so that caring for the illness will not work a financial hardship on them. Thus, what we are seeking is a means to t.ansfer an appropriate amount of money to a sick person, while avoiding the subsidization of price that characterizes present insurance plans.

In searching for ways of accomplishing this, it is important to understand that price subsidization is not a common aspect of most types of insurance, but rather is a special characteristic of health insurance. Insurance usually takes the form that if the event insured against occurs, a certain amount of money is given to the individual. For example, if an individual's home burns down, he receives a certain sum of money. The amount he receives depends only on the damage sustained, not on how much he spends to replace the damaged housing. As a consequence, he must pay from his pocket the full market costs of any upgrading in housing quality that he may choose. Likewise, if he employs an inefficient contractor, he must bear the additional cost. Because of this feature, fire insurance payments do not distort consumer choice on how the damage is repaired. There is no subsidy effect.

The subsidy effect would also disappear from hospital insurance
if such insurance paid specified amounts to individuals requiring
hospitalization. But, in order for such a plan to be effective at re-
ducing the financial costs imposed on an individual by an illness, the
size of the payment would need to depend upon the seriousness of his ill-
ness. Insurance payments that did not reflect the extent of illness would
not provide good "insurance" against the financial risks of hospitali-
zation. They would shift the level of resources available to an in-
dividual upwards, but the wide range of possible hospital bills would
still leave him with the possibility of a large loss should he be
hospitalized. Thus, to provide effective insurance against loss,
the size of the payments must vary with the severity of illness. The
problem that has led to price subsidy rather than fixed payments in
health insurance is the practical difficulty of providing fixed pay-
ments that appropriately reflect the degree of illness. Insurance
companies have evidently not felt it possible to establish a procedure
for determining the size of fixed payments that would make such
insurance more desirable to purchasers of insurance than the present
price-subsidy plans.

In the following section, we propose a new type of hospital
insuranc- that would significantly reduce the price-subsidy problem
in this important area of care. The proposal is oft.. J to illustrate
the principle involved in improving medical insurance, rather than
as a final solution. There are alternatives that can be imagined
for hospital insurance, and the same principle could be applied to
comprehensive health insurance if there were a number of competing

organizations offering comprehensive health services. In each in-
stance, the objective should be to make the consumer bear as fully
as possible the financial consequences of his actions.

Variable Cost Insurance

Ideally insurance operates as follows: if a certain event
occurs which was not predictable in advance, the insured individual
receives a given amount of money. As we have just seen, this type
of insurance is difficult to apply in medical care. Since a severity
index cannot be defined, insurance cannot be of the form: if you have
complications of a certain severity in your appendectomy, you will
receive $500, but if they are of greater severity, you will receive
$600. But severity of illness is not the only determinant of the
size of a hospital bill. Hospitals vary widely in the luxuriousness
of the accommodations, the range of services available, the intensive-
ness of care, and the efficiency of operation. Because of these
variations, the cost of treating the same illness can differ widely,
depending upon the hospital used. If the amount of insurance payment
for a hospital episode were independent of the hospital used, the patient
would reap the full monetary savings from use of an ' xpensive hospital
and pay the full additional costs from use of an expensive one. The
subsidy effect upon hospital choice would be eliminated.

We believe that there is a practical means of making hospital
insurance payments substantially independent of the hospital used.
We call this new type of hospital insurance Variable Cost Insurance
(VCI). The basic features of VCI are:

1. An insurance organization (either the government or a private company) offering VCI would determine an expense class for each hospital in a community or area by examining historical cost experience.

2. Subscribers would designate, in consultation with their physicians, their preference in hospitals.

3. In private plans, the insurance premium charged subscribers would be proportional to the expense class of their preferred hospital(s). In government-sponsored plans, premiums would be charged only for coverage in excess of a "standard benefit plan."

4. The insurance organization would pay hospitals on the basis of either billed charges or costs, whichever is mutually agreed upon.

5. In the event that the subscriber enters a hospital, the proportion of the bill paid by VCI would vary inversely with the expense class of the hospital used.

Insurance plans incorporating these features can make the individual consumer an active seeker of economical care, instead of merely an interested observer of the efforts of others to control costs. VCI attacks the problem of the distorted incentives that face the consumer under prevailing insurance plans, and it gives hospitals an incentive to be efficient. Most importantly, it can be introduced without substantial prior research or the development of a large administrative structure. It avoids the quality-comparison problems inherent in incentive payment plans based on "target costs," and the bureaucratic complexities of central planning and franchising. It is not very sensitive to errors in administration, and it is adaptable to all types of insurance programs: Variations of the basic

plan can be applied to individual insurance, group insurance, and government sponsored programs, such as Medicare and Medicaid.

Description of VCI

Under VCI hospitals in a community would be rated according to their expensiveness. The expense class rating for a hospital would be the best estimate of the expense to the insurance organization of having the average subscriber receive his care from that hospital. The expense rating would be based on historical data on charges or per case expense.[1]

Those insured would be given a list showing the expense class of each hospital in the community and would be asked to designate an expense class based on their preference in hospitals. They would be expected to consult with their physician in making the choice. If feasible, hospitals might be given separate expense ratings for surgery, medicine, obstetrics, and pediatrics, and the consumer could elect different hospitals for different services.

In Medicare-Medicaid or in private group plans, the government or the employer might cover the insurance cost for a "standard benefit plan," which would include hospital coverage for the average expense class. Those insured would pay additional amounts if they choose an expense class above the average. In plans which include coinsurance (that is, plans in which the consumer pays a certain

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[1] We discuss the technical details of expense rating in another paper: "The Economics of Moral Hazard: Further Comment," P-4080-1, The RAND Corporation, August 1969. See also our paper, "A New Approach to Hospital Insurance," P-4016, The RAND Corporation, January 1969.

percentage of the total bill) the extent of coinsurance might decrease
as one moves to expense classes below the average. A hypothetical plan
embodying this feature is illustrated in Table 7. If those insured
under Medicare (which now has no coinsurance) choose a lower than
average class, an amount might be applied to payments under Part B
(insurance for physician services). In individual private plans, the
charge for insurance would vary directly with the expense class of
coverage designated by the subscriber.

If a person is hospitalized in an institution whose expense class
differs from his insurance coverage, the basic plan would pay costs
in proportion to the value of I/H, where I is the Insurance policy
expense class and H is the expense class of the Hospital actually
used. For example, if the bill were $1,000 and I/H were .8 (that is,
if the insurance expense class were 20 percent less than the expense
class of the hospital used), then the subscriber would receive $800,
less any coinsurance which might be included. If, for example,
the plan included 20 percent coinsurance, the subscriber would receive
$1,000 x 0.8 x .08 = $640. If I/H equalled one, he would receive $800,
just as he would under present plans with 20 percent coinsurance.

VCI could ignore the subscriber's expense class in emergency
cases where other facilities were not available and pay the standard
terms. It might also pay all or some of any additional costs incurred
if the facilities in the elected expense class were full or if special
services available only at more expensive hospitals were required. Other
variations are possible and are discussed in our papers previously cited.

Table 7

Expense Class (per day)	Insurance Cost ($ per Mo)	Employer Contribution ($ per Mo)	Insured's Contribution ($ per Mo)	Percent Coinsurance[a]
$40 (lowest)	14	14	0	0
$50	14	14	0	6
$60	14	14	0	13
$70[b]	14	14	0	20
$80	16	14	2	20
$90	18	14	4	20
$100	20	14	6	20
$110	22	14	8	20
$120 (highest)	24	14	10	20

Note:

[a] Coinsurance is the percent of the bill paid by the consumer.

[b] Assumed average expense class of hospitals under current plan.

The Arguments Against Insurance Plans Which Do Not Subsidize Price

In discussions and correspondence with people in the medical, hospital, and insurance fields, a number of arguments have been made against VCI. Most of these arguments apply equally to any plan that attempts to increase the responsibility of the individual for the financial consequences of his actions. Likewise, our counters to the arguments against VCI have general applicability.

The most common and strongly made criticism asserts that in order for VCI to be beneficial, individuals must have significant freedom of choice of hospitals -- but such freedom does not exist. In a letter to us, Theodore Allison, Senior Research Associate at Metropolitan Life, noted the limitations of freedom of choice quite succinctly:

> Actually, most of the population live in areas where the choice of hospital is quite limited or non-existent. Even in large cities where there are several hospitals, the choice of hospitals convenient to the patient is limited. When a patient's condition requires facilities or services available in only one hospital, the idea of effective choice disappears. Choice is also circumscribed by the hospital appointments of the patient's physician.

Although we feel Mr. Allison has somewhat overstated the limitations on freedom of choice, we do not deny that consumers' freedom of choice of hospitals is limited for all of the reasons given by him. The flaw in the argument is that these limitations on freedom of choice automatically make VCI an undesirable form of insurance. The conclusion is based on the implicit (but faulty) premise that widespread freedom of choice is an essential aspect of VCI. Suppose there were no freedom of choice. Every patient could go to one and only one hospital. Even in this extreme situation, VCI would be desirable on equity grounds. People who went to low-cost (and perhaps

low-quality) hospitals would pay less for insurance. Those who

utilized high-cost hospitals would pay correspondingly higher rates.

By contrast, the prevailing methods of charging everyone the same

premium regardless of the hospital used has the effect of causing

those who use low-cost hospitals to subsidize those who use high-cost

hospitals. Low-cost hospitals are usually in low-income areas (and

thus used by low-income people) and high-cost hospitals

generally provide their services to the more affluent in the community.[1]

Thus, the effect of present insurance arrangements is that the poor,

insofar as they pay their own insurance premiums, underwrite the costs

of care for the more well-to-do. VCI would remove this inequity.

Although VCI would still be desirable if consumers had no choice

of hospitals, it is true that the preferences of consumers must play

some role in decisions on hospitalization if VCI is to have a bene-

ficial impact on hospital costs. The amount of direct consumer in-

fluence and freedom of choice required, however, is not nearly as

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[1]After taking account of a number of factors including hospital
size and wage level, McNerney, et al. found the buying power index
of the area around a hospital to be by far the best predictor of
hospital cost per patient day. The buying power index explained
nearly one-half of the variation in cost per patient day, and was
nearly twice as important as all the other variables taken together.
Walter J. McNerney, et al., Hospital and Medical Economics, Chicago;
Hospital Research and Education Trust, p. 819.
   Many of the large, urban teaching hospitals affiliated with
medical schools, appear to be exceptions to this general rule.
Their high cost, however, probably arises because of the require-
ments of the teaching program, and one can properly question whether
the cost resulting from the teaching activities should be borne by
the patient. If teaching costs were financed from another source
and not charged to patients, costs at teaching hospitals (when
adjusted for case-mix) might not appear particularly high.
   For a number of reasons, it might prove necessary to make special
arrangements for major teaching hospitals under VCI, but this is not
a shortcoming of VCI so much as it is a reflection of the inade-
quacies of our methods of financing medical education.

large as might be supposed. Not everyone has to be willing or able
to change hospitals because of cost differences. If only 10 percent
of the patients of a high-cost, low-quality hospital decide to go
elsewhere, the management of the hospital will be under considerable
pressure to improve its performance. Even if the change is gradual,
with only a few percent of patients going elsewhere each year, the
cumulative effect over a five year period will be very substantial.
In fact, not more than a few percent a year could go to more efficient
hospitals without their becoming full. This should considerably ease
the adjustment process; it should not be thought that VCI would lead to
a number of hospitals immediately closing their doors, thereby putting
an intolerable burden on thos. remaining. Further, persons who are
unwilling or unable to change from high cost hospitals are very likely
to exert more pressure on management to improve efficiency under VCI,
since their premiums will reflect this high cos-. Not only will VCI
provide a general spur for efficiency, it will also give an incentive
to hospitals to avoid wasteful duplication. If the hospital buys
an expensive piece of equipment which is little used, its expense
class will rise without any commensurate increase in benefit to its
users. It may therefore lose some patients.

It is also argued that the physician, not the patient chooses
the hospital, so that increasing the cost awareness of consumers is
irrelevant to influencing choice of hospitals. This argument implies
that physicians completely ignore the concerns and preferences of
their patients. This is obviously incorrect. Most physicians do
take into account the wishes and desires of their patients. Thus,

under VCI, a physician with appropriate staff appointments might very well tailor his recommendations on hospital choice to the income status of his patients. VCI might also encourage physicians to obtain staff appointments at hospitals in different expense classes. In addition, some physicians may move their practices to more efficient hospitals in order to lower the cost of insurance to their patients. Again, it should be noted that only a small percentage of physicians need to make such moves in order to have substantial impact. Even those physicians who do not move seem more likely under VCI to bring pressure to bear upon the hospital management to curtail waste. The cost of such waste will be borne directly by their patients, perhaps causing them to lose some patients, but in any event making their patients less well off.

Another argument that can be raised against VCI is that consumers do not have the expertise required to choose a hospital intelligently. In answer to this, we note first that the consumer cannot be in a worse position under the proposed plan than he is now -- when he must rely almost entirely upon his physician for information about hospitals. We believe, however, that a likely benefit of VCI would be the creation of a strong demand from consumers for better information on the quality of different hospitals -- improving their ability to choose wisely.

Increased demand for information on quality would occur because the choice of hospitals under VCI would have much greater monetary significance to the consumer. Under current plans, he is merely interested in being assured of good quality. If his physician recommends Hospital A, it does not matter if Hospital A is 20 percent

more expensive than Hospital B. It will not cost him much if any more
to go to Hospital A. Under VCI, however, he will want to know at
which hospital he can get acceptable care at the cheapest price. This
requires comparative information on quality. The government might be
encouraged to provide such information. If not, privately sponsored
quality rating services may come into being.

Another possible concern about VCI is expressed by those who
feel that it is likely to be very successful at causing consumers to
economize upon their hospital care. They worry that people will be
unwilling to pay the full cost of high-quality care. Some people
will, and some people won't; but this is one of the desirable aspects
of VCI. The argument is often heard, "In matters of health, only the
best is good enough." This is good rhetoric, but bad analysis. The
"best" often (and increasingly) costs a lot of money, and some people
are unwilling or unable to afford it. As we argued in the analogy about
automobile production, forcing people to buy the best when they would
prefer a cheaper model makes them worse off. We are sure that some con-
sumers who now go to Cadillac-quality hospitals would prefer less expen-
sive care if they bore the full cost implications of their own choice.
Health care and education are both services where quality is said to be
extremely important, yet many students attend colleges near home or
colleges with subsidized tuitions even though they know that their are
not colleges of the highest quality. The monetary savings more than
compensate them for the lower quality of the college. We strongly sus-
pect that exactly the same type of decision would occur in the hospital
field if patients bore the full cost implications of their choice.

There does exist one valid political problem in applying VCI to government sponsored insurance programs such as Medicare and Medicaid. These programs have as one of their objectives evening out the differences in the quality and quantity of medical care consumed by the poor and the non-poor. If VCI were applied to these programs, it is very likely that lower income people would choose relatively low-cost hospitals whenever possible, since saving on expenditures is very important to them. As a result, the poor would end up in the less expensive (and presumably lower-quality) hospitals, while the rich would use the more expensive and (sometimes) better-quality hospitals. Although such an outcome is not very different from that which actually occurs under the present system, given the strong pressures toward "equality" of medical care for all citizens, this effect of VCI may be politically fatal. If so, it is too bad, because it means we are doomed to perpetuate a wasteful approach to improving the welfare of the poor. Poor people prefer to save money by going to less expensive hospitals because the savings are more valuable to them when spent on other goods or services. If the savings achieved by Medicare and Medicaid from introducing VCI were used on other programs to aid the aged and the poor, the overall welfare of the recipients could be increased from its current level.

Conclusion

The contribution of health insurance to the rapidly rising medical costs of recent years has not been fully appreciated. This paper has described a number of harmful side effects of present health insurance plans. By raising the demand for services, they exacerbate inflation in medical prices. Likewise they leave consumers and producers concerned

only with obtaining and producing the highest quality care, irrespec-
tive of the other goods that must be sacrificed to obtain that care.
They permit inefficient producers to survive and leave health planners
in the dark about what quality of care consumers really are willing
to pay for. At the same time, of course, health insurance has a number
of appealing features: Consumers are protected against the unpredic-
table nature of illness and government sponsored insurance plans for
the poor can lower economic barriers to care for them.

In this paper we have proposed a new type of hospital insurance,
one which can preserve the appealing features of the plans we have,
while eliminating some of their objectionable aspects. The new plan
places the financial consequences of hospital choice upon the potential
user. Thus, we can expect that those hospitals whose quality level
is not commensurate with their expense would tend to lose patients.
Further, there would be some indication of what consumers are willing
to pay for in regard to hospital quality. Variations of this kind of
insurance can be made applicable to types of health insurance other
than hospital insurance and to comprehensive care plans such as the
Kaiser Health Plan.

We would be the first to admit that insurance schemes such as
the one proposed will not entirely solve the problem of escalating
hospital and medical care costs. The seemingly inevitable labor in-
tensiveness of the industry means that it will become more expensive
as labor becomes relatively dearer. Further, the specialized and
esoteric nature of medical care limits the effectiveness of consumer
choice in penalizing the inferior producer and restraining unwarranted

increases in cost. Accepting these limitations, it still seems very clear that we have much to gain and little to lose by placing the monetary consequence of choice back onto the shoulders of the consumer.